

4.0 ALTERNATIVES

The following section is a summary of the alternatives plans considered and the rationale for why a plan was not carried forward for detailed evaluation of the physical, ecological, and socio-economic impacts resulting from that plan. Only feasible alternatives will be carried forward for evaluation. The feasibility of practicable alternatives is assessed considering costs, logistics and existing technology in light of overall project proposals. Feasibility should be assessed with reference to specific market factors necessary to make the project economically viable and logistically achievable from the applicant's perspective.

4.1 No Action Alternative

This alternative could take two forms. One scenario would be to take no corrective action in the case-by-case manner in which limestone mining is being permitted and wetland mitigation/restoration activities are currently undertaken. Under this scenario there would be no development of a comprehensive land use master plan for the lakebelt area. There is also strong consensus among the environmental resource agencies and groups that the current wetland mitigation requirements do not adequately compensate for the resulting wetland impacts. For these reasons this scenario does not meet the objectives of this study and will not be carried forward for further evaluation. The second scenario would require that no new permits for mining are issued and that all existing permits where work has not commenced be revoked. This scenario would impose economic hardship on the mining industry as well as increased cost of construction goods and services to the people of Florida. The preamble to the 404(b)(1) guidelines states that "if an alleged alternative is unreasonably expensive to the applicant, the alternative is not practicable." The determination of what constitutes an unreasonable expense should generally consider whether the projected cost is substantially greater than the costs normally associated with the particular type of project or would force an applicant to accept a level of business risk that would be unreasonable. Due to the legal issues arising from the revoking of existing permits and the economic hardships imposed on the mining industry this scenario will not be carried forward for further evaluation.

4.2 Curtail Future Mining

This alternative would allow mining only in existing permitted areas, all future mining permits would be denied. There is currently approximately 5,000 acres of land permitted for mining within the study area (refer to Appendix A, figure 4). Under this scenario mining reserves in Miami-Dade County would be depleted in about 15-years, which would require stone products to be brought in from elsewhere. As domestic rock resources, i.e., peninsular Florida, become more expensive to produce through depletion, withdrawal actions, public opposition, and urbanization, more and more outside sources of rock will have to be imported to meet future demands. At present

however, the amount of imported rock is just over 1 percent of the State's annual requirement. Even with concerted effort, and if it were now economical to do so, it would take time to increase outside sources of rock imports to equal future demands. Florida must, therefore, continue to supply the majority of the State's crushed rock needs for years to come.

Appendix I presents an evaluation of non-domestic alternatives to limestone mining in the Lakebelt. This analysis uses the 404(b)(1) guidelines to consider if the alternatives are "practicable". A summary of the analysis found that there are extremely limited reserves of construction grade rock in Florida outside the Lakebelt. Alternate Florida sites are being fully utilized and are inadequate to replace any portion of Lakebelt rock. These sites have a substantially lower yield of useable rock per acre than the Lakebelt. Therefore, at these alternate sites, a larger spatial area needs to be impacted to produce an equivalent quantity of rock. The alternate sites in Florida lack adequate transportation infrastructure to serve the Lakebelt market area.

Alternate mining sites in other States have extreme logistical and cost problems. Rail and highway transportation infrastructure does not exist to move large quantities of rock to Florida. Refer to **Appendix I** to review the alternative analysis sheets for Georgia and Alabama quarries.

Alternative quarry sites in foreign countries also have extreme logistical and cost problems. Rail served deep water port facilities that are capable of handling large volumes of rock do not exist in Florida. It would be difficult to expand existing port facilities in Florida, new facilities would be required. If new facilities were constructed, it is likely that the combination of depth, portside stockpile areas, and rail service could only be provided in Jacksonville. Jacksonville port expansion would come at great expense and would require large amounts of wetlands to be filled to accommodate this expansion. **Appendix I** analyzes potential quarries in Mexico, Nova Scotia and the Bahamas and provides a brief discussion of the constraints associated with expansion of each of these quarries and their associated port facility. For these reasons these alternatives do not meet the objectives of this study and will not be carried forward for further evaluation.

4.3 Comprehensive Mining Plan

This alternative would allow future mining under a comprehensive plan that once adopted would serve as a guide in subsequent planning and regulatory actions. In an attempt to develop a plan, an Issue Advisory Team (Team) was formed under the interagency South Florida Ecosystem Restoration Working Group (Working Group). The Team was comprised of representatives from federal, state, and county agencies; rock mining interests; environmental interests; and private landowners with the goal of developing a consensus-based alternative that would meet the objectives of the study. The report prepared by the Team for the Working Group is contained in this PEIS as **Appendix F**. The efforts of the Team lead to the development of an alternative in the

form of the land-use map presented in figure 10. The Map depicts areas where mining is allowed and under what time frame and conditions. This alternative identifies future mining and mitigation areas; integrates the mining with Everglades restoration activities, such as the Central and Southern Florida (C&SF) Project Comprehensive Review Study (Restudy); and protects and enhances municipal and industrial water supplies for the region. The next step of the Lakebelt Implementation Committee will be the development of a Phase II master plan to further address land use compatibility and conflicts, and additional well field protection measures. The detailed master plan, if adopted by the Miami-Dade County Board of County Commissioners, could serve as the basis for the county's comprehensive development master plan for this region.

This alternative plan served as a baseline from which alternative plans for the C&SF Comprehensive Everglades Restoration Plan were formulated and evaluated. The Northwest Dade County mining region has long been identified as an element of the Water Preserve Areas (WPA's), that compose a major component of the Comprehensive Everglades Restoration Plan. As a component of the WPAs, it has been accepted that water resource projects would be implemented within this area in some combination with limestone extraction. These Comprehensive Everglades Restoration Plan components are intended to provide additional clean water for urban water supply and to the Everglades for the purpose of hydropattern restoration. However, to formulate and evaluate Comprehensive Everglades Restoration Plan project features, the most likely future land-use conditions need to be established. Identified in Figure 10, are areas that may be needed to support Everglades's restoration. These areas have time constraints on when mining could proceed which will allow Everglades restoration planning to proceed without eliminating component options.

The mining interests developed a mining plan (figure 11) which is within the allowable footprint of the land-use map developed by the Issue Team. For the following analysis this plan will be referred to as the "Miners Recommended Plan". The miners recommended plan would avoid some areas that were identified for mining by the Issue Team, which would lessen adverse impacts to aquatic resources. The analysis presented in Section 6, Environmental Effects, will utilize the "Miners Recommended Plan" as the basis for this analysis. The time frames, identified by the Issue Team, under which mining can proceed in specific areas is considered part of the recommended plan.

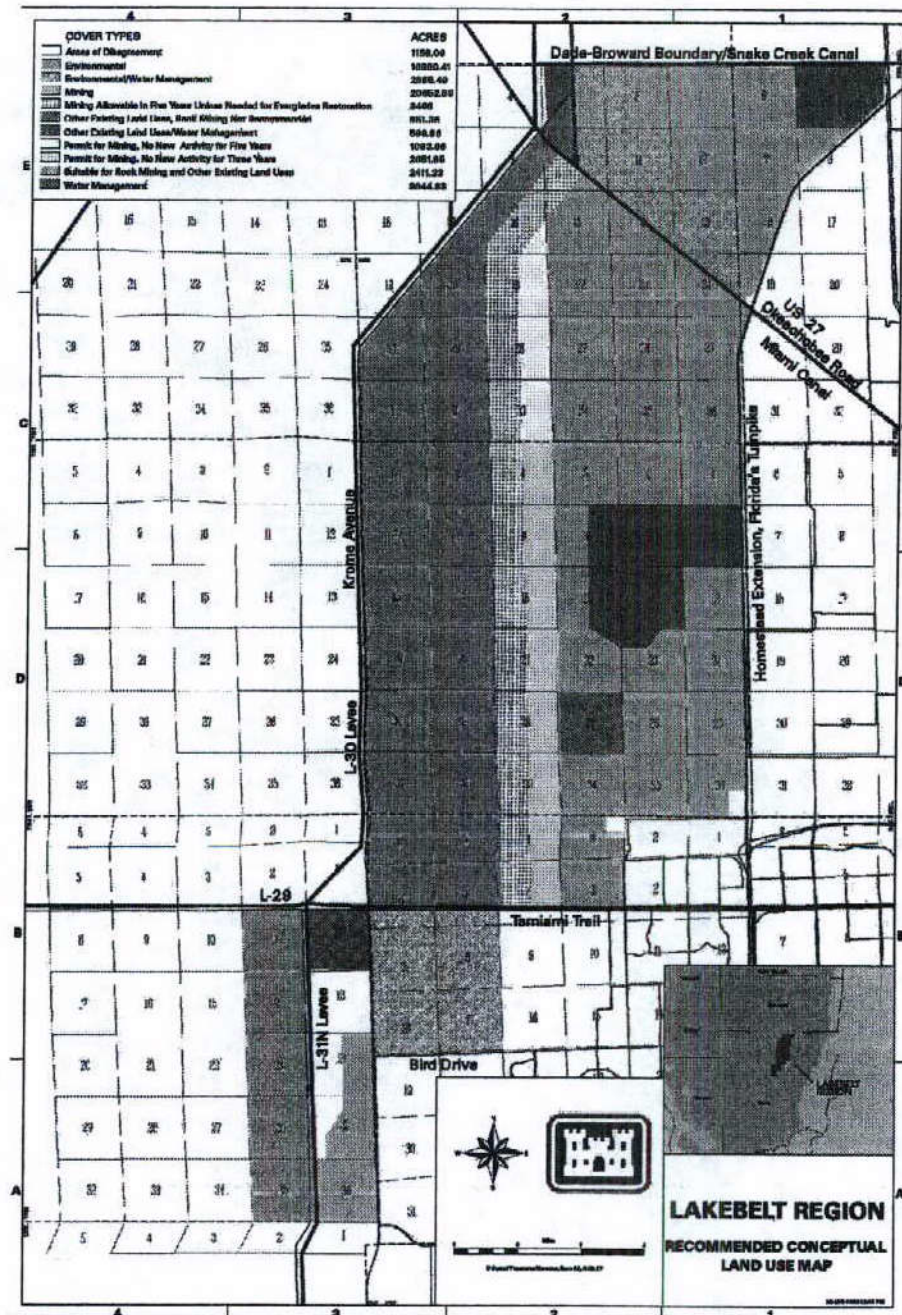


Figure 10 Issue Advisory Team Recommended Alternative Map

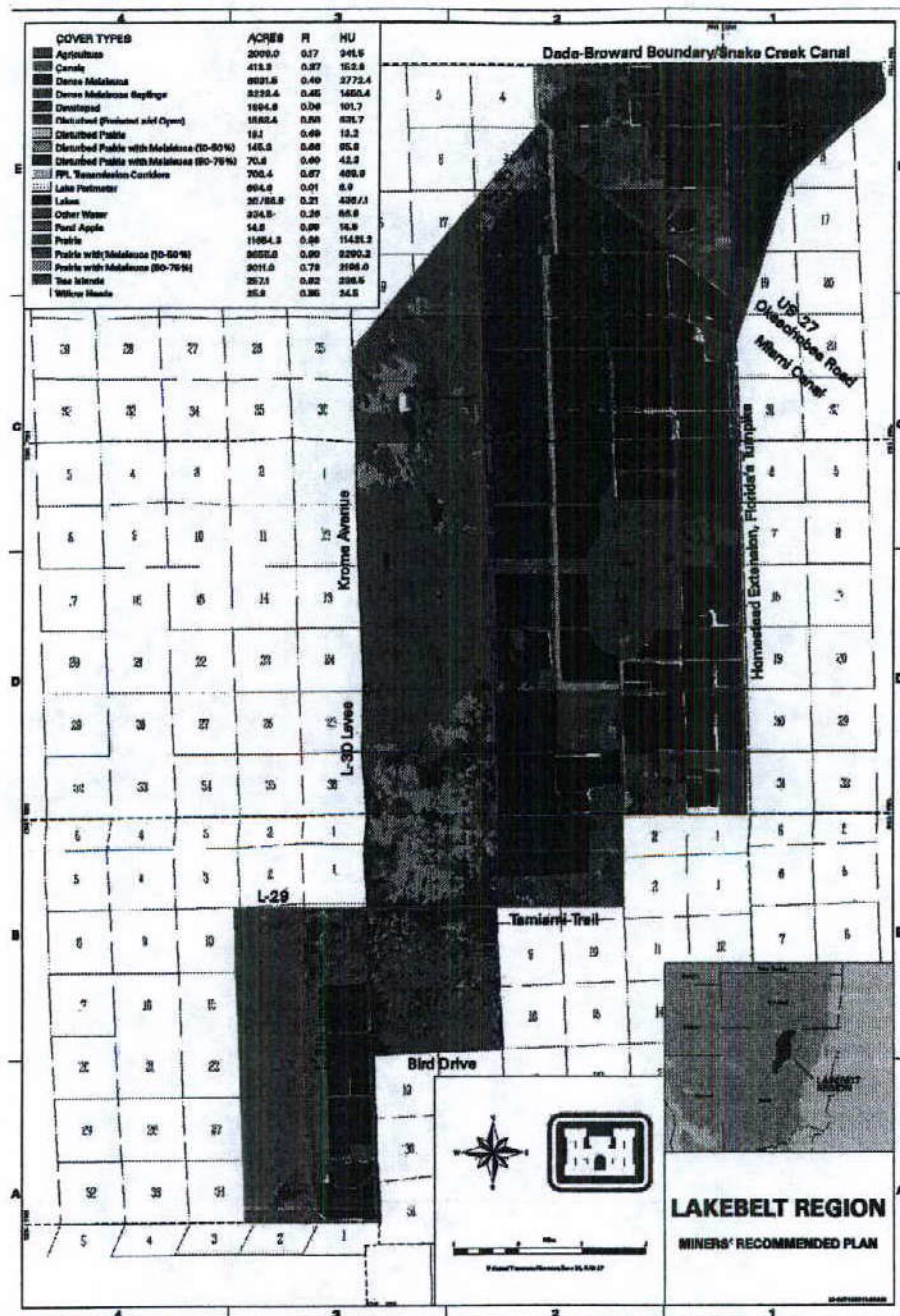


Figure 11 Miners Recommended Plan